

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Thumpudi et al.

Art Unit: Not yet assigned

Application No. Not yet assigned

Filed: August 15, 2003

For: MULTI-CHANNEL AUDIO ENCODING  
AND DECODING

Examiner: Not yet assigned

Date: August 15, 2003

**INFORMATION DISCLOSURE STATEMENT**  
**PURSUANT TO 37 C.F.R. § 1.97(b)**

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Listed on the accompanying form PTO-1449 and enclosed herewith are several English-language documents. Applicants respectfully request that these documents be listed as references cited on the issued patent.

Applicants filed this Information Disclosure Statement ("IDS") within three months of the filing date of a national application, within three months of the date of entry of the national stage as set forth in § 1.491 in an international application, before the mailing date of a first Office action on the merits, or before the mailing of a first Office action after the filing of request for continued examination under § 1.114. As a result, no fee should be required to file this IDS. However, if the Patent Office determines that a fee is required for Applicants to file this IDS,

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**duplicate** copy of this Information Disclosure Statement is enclosed.

The filing of this IDS shall not be construed to be an admission that the information cited in the statement is, or is considered to be, prior art or otherwise material to patentability as defined in Rule 56.

Respectfully submitted,

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By



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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>	<b>Attorney Docket Number</b>	3382-65133
	<b>Application Number</b>	Not yet assigned
	<b>Filing Date</b>	August 15, 2003
	<b>First Named Inventor</b>	Thumpudi et al.
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	<b>Examiner Name</b>	Not yet assigned

### U.S. PATENT DOCUMENTS

Examiner's Initials*	Cite No. (optional)	Number	Date	Name
		5,845,243	12.01.98	Smart et al.
		5,995,151	11.30.99	Naveen et al.
		6,115,689	09.05.00	Malvar

### FOREIGN PATENT DOCUMENTS

Examiner's Initials*	Cite No. (optional)	Number	Date	Country

Examiner's Initials*	Cite No. (optional)	OTHER DOCUMENTS
		Yang et al., "An Inter-Channel Redundancy Removal Approach for High-Quality Multichannel Audio Compression," in <i>AES 109<sup>th</sup> Convention</i> , Los Angeles, California, 8 pp. (September 2000). ✓
		Wang et al., "A Multichannel Audio Coding Algorithm for Inter-Channel Redundancy Removal," in <i>AES 110<sup>th</sup> Convention</i> , Amsterdam, the Netherlands, 6pp. (May 2001).
		Yang et al., "Adaptive Karhunen-Loeve Transform for Enhanced Multichannel Audio Coding," Proc. SPIE Vol. 4475, 13 pp., Mathematics of Data/Image Coding, Compression, and Encryption IV San Diego, CA. (July 29 - August 3, 2001). ✓
		Vaidyanathan, <i>Multirate Systems and Filter Banks</i> , Prentice Hall Signal Processing Series, Cover page, pp. 745-751 (1992). ✓
		"MPEG2 Audio for DVD: the Compromise Choice," 5 pp. (October 1996). ✓
		Edler et al., "Perceptual Audio Coding Using a Time-Varying Linear Pre- and Post-Filter," in <i>AES 109<sup>th</sup> Convention</i> , Los Angeles, California, 12 pp. (September 2000). ✓

EXAMINER SIGNATURE:	DATE CONSIDERED:
* Examiner: Initial if reference considered, whether or not in conformance with MPEP 609. Draw line through cite if not in conformance and not considered. Include copy of this form with next communication to applicant.	

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		"ISO/IEC 13818-7, Information Technology -- Generic Coding of Moving Pictures and Associated Audio Information -- Part 7: Advanced Audio Coding (AAC)," 174 pp. (1997). ✓	
		Wang et al., "EE225a Lecture 13: Karhunen Loève Transform and Discrete Cosine Transform," Department of EECS, University of California at Berkley, 10 pp. (March 2002). ✓	
		Meares, D.J., "Matrixed Surround Sound in an MPEG Digital World," <i>Journal of the Audio Engineering Society</i> , Vol. 46, No. 4, 13 pp. (April 1998). ✓	
		Stuart et al., "Lossless Compression for DVD-Audio," in <i>AES 9<sup>th</sup> Regional Convention Tokyo</i> , 4 pp. (1999). ✓	
		Kuo et al., "A Study of Why Cross Channel Prediction is Not Applicable to Perceptual Audio Coding," <i>IEEE Signal Processing Letters</i> , Vol. 8, No. 9, 3 pp. (September 2001). ✓	
		Van Assche et al., "Lossless Compression of Pre-Press Image Using a Novel Color Decorrelation Technique," <i>Proc. SPIE, Very High Resolution and Quality III</i> , Vol. 3308, 8 pp. (1998). ✓	
		Davis, "The AC-3 Multichannel Coder," Dolby Laboratories, 9 pp. (Downloaded from the World Wide Web on August 15, 2002). ✓	
		Gibson et al., <u>Digital Compression for Multimedia</u> , Title Page, Contents, "Chapter 7: Frequency Domain Coding," Morgan Kaufman Publishers, Inc., pp. iii, v-xi, and 227-262 (1998). ✓	
		Herley et al., "Tilings of the Time-Frequency Plane: Construction of Arbitrary Orthogonal Bases and Fast Tiling Algorithms," <i>IEEE Transactions on Signal Processing</i> , Vol. 41, No. 12, pp. 3341-59 (1993). ✓	
		"ISO/IEC 11172-3, Information Technology -- Coding of Moving Pictures and Associated Audio for Digital Storage Media at Up to About 1.5 Mbit/s -- Part 3: Audio," 154 pp. (1993). ✓	
		ITU, Recommendation ITU-R BS 1115, Low Bit-Rate Audio Coding, 9 pp. (1994). ✓	
		Solari, <u>Digital Video and Audio Compression</u> , Title Page, Contents, "Chapter 8: Sound and Audio," McGraw-Hill, Inc., pp. iii, v-vi, and 187-211 (1997). ✓	
		"ATSC Standard: Digital Audio Compression (AC-3), Revision A," 140 pp. (August 2001). ✓	
		Chen et al., U.S. Patent Application Serial No. 10/017,702, entitled, "Quantization Matrices for Digital Audio," filed December 14, 2001. ✓	

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		Chen et al., U.S. Patent Application Serial No. 10/017,861, entitled, "Techniques for Measurement of Perceptual Audio Quality," filed December 14, 2001.			✓
		Chen et al., U.S. Patent Application Serial No. 10/020,708, entitled, "Adaptive Window-Size Selection in Transform Coding," filed December 14, 2001.			✓
		Chen et al., U.S. Patent Application Serial No. 10/016,918, entitled, "Quality Improvement Techniques in an Audio Encoder," filed December 14, 2001.			✓
		Chen et al., U.S. Patent Application Serial No. 10/017,694, entitled, "Quality and Rate Control Strategy for Digital Audio," filed December 14, 2001.			✓

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